

Substitute Form PTO-1449

U.S. Department of Commerce
Patent and Trademark Office

Attorney's Docket No.

07039-296001

Application No.

09/723,121

**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

Applicant

Gautam Khurana et al.

Filing Date

November 27, 2000

Group Art Unit

1616

U.S. Patent Documents

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
CA	AA	2,223,538	12/03/40	Taylor et al.			
	AB	2,226,529	12/31/40	Austin			
	AC	2,257,911	10/07/41	Kraft			
	AD	2,372,669	04/03/45	Haney			
	AE	2,418,482	04/08/47	Robinsohn			
	AF	2,752,358	06/26/56	Ehrhart			
	AG	2,874,153	02/17/59	Bowman et al.			
	AH	2,882,263	04/14/59	Natta et al.			
	AI	2,913,442	11/17/59	Matlack			
	AJ	2,916,475	12/08/59	Caldwell et al.			
	AK	3,012,994	12/12/61	Bell et al.			
	AL	3,112,300	11/26/63	Natta et al.			
	AM	3,112,301	11/26/93	Natta et al.			
	AN	3,143,527	08/04/64	Wittbecker			
	AO	3,238,553	03/08/66	Bailey et al.			
	AP	3,595,952	07/27/71	Davidson et al.			
	AQ	3,745,061	07/10/73	Champaneria et al.			
	AR	4,279,053	07/21/81	Payne et al.			
	AS	4,441,227	04/10/84	d'Argembeau			
	AT	4,688,857	08/25/87	Boucherie			
	AU	4,987,071	01/22/91	Cech et al.			
	AV	5,274,873	01/04/94	Shields			
	AW	5,335,389	08/09/94	Curtis et al.			
	AX	5,511,275	04/30/96	Volpenhein et al.			
	AY	5,681,335	10/28/97	Serra et al.			
	AZ	6,127,525	10/03/00	Crystal et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Signature

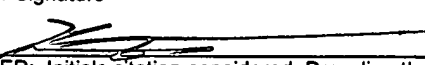
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(37 CFR 1.98(b))							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation
CA	AAA	WO 95/15342	06/08/95	PCT			Yes
Y	ABB	448 061	Unknown	Belgium			No

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
CA	ACC	Agrawal et al., "Oligodeoxynucleoside phosphoramidates and phosphorothioates as inhibitors of human immunodeficiency virus," <u>Proc. Natl. Acad. Sci. USA</u> , 1988, 85:7079-7083
	ADD	Barthel et al., "Laboratory Methods - Gene Transfer Optimization with Lipospermine-Coated DNA," <u>DNA Cell Biology</u> , 1993, 12(6):553-560
	AEE	Behr et al., "Efficient gene transfer into mammalian primary endocrine cells with lipopolyamine-coated DNA," <u>Proc. Natl. Acad. Sci. USA</u> , 1989, 86:6982-6986
	AFF	Bergelson et al., "Isolation of a Common Receptor for Coxsackie B Viruses and Adenoviruses 2 and 5," <u>Science</u> , 1997, 275:1320-1323
	AGG	Blau and Springer, "Molecular Medicine - Gene Therapy - A Novel Form of Drug Delivery," <u>New England J. Med.</u> , 1995, 333(18):1204-1207
	AHH	Boudin et al., "Isolation and Characterization of Adenovirus Type 2 Vertex Capsomer (Penton Base)," <u>Virology</u> , 1979, 92:125-138
	AII	Brenner, "Reports of Adenovector "Death" Are Greatly Exaggerated," <u>Mol. Ther.</u> , 2000, 1(3):205
	AJJ	Burch and Mahan, "Oligonucleotides Antisense to the Interleukin 1 Receptor mRNA Block the Effects of Interleukin 1 in Cultured Murine and Human Fibroblasts and in Mice," <u>J. Clin. Invest.</u> , 1991, 88:1190-1196
	AKK	Chapman et al., "Gene Transfer Into Coronary Arteries of Intact Animals With a Percutaneous Balloon Catheter," <u>Circ. Res.</u> , 1992, 71:27-33
	ALL	Chen et al., "Multitarget-ribozyme directed to cleave at up to nine highly conserved HIV-1 env RNA regions inhibits HIV-1 replication-potential effectiveness against most presently sequenced HIV-1 isolates," <u>Nucleic Acids Res.</u> , 1992, 20(17):4581-4589
	AMM	Chen et al., "Expression and Function of Recombinant Endothelial Nitric Oxide Synthase Gene in Canine Basilar Artery," <u>Circ. Res.</u> , 1997, 80:327-335
	ANN	Chen et al., "Effects of <i>in vivo</i> adventitial expression of recombinant endothelial nitric oxide synthase gene in cerebral arteries," <u>Proc. Natl. Acad. Sci. USA</u> , 1997, 94:12568-12573
	AOO	Chen et al., "Transfer and expression of recombinant nitric oxide synthase genes in the cardiovascular system," <u>Trends in Pharmacological Sciences</u> , 1998, 19:276-286
	APP	Clapp et al., "Fetal Liver Hematopoietic Stem Cells As a Target for In Utero Retroviral Gene Transfer," <u>Blood</u> , 1991, 78(4):1132-1139
	AQQ	Collins and Olive, "Reaction Conditions and Kinetics of Self-Cleavage of a Ribozyme Derived from <i>Neurospora</i> VS RNA," <u>Biochem.</u> , 1993, 32:2795-2799
	ARR	Crawford-Miksza and Schnurr, "Analysis of 15 Adenovirus Hexon Proteins Reveals the Location and Structure of Seven Hypervariable Regions Containing Serotype-Specific Residues," <u>J. Virol.</u> , 1996, 70(3):1836-1844
	ASS	Crystal et al., "Administration of an adenovirus containing the human <i>CFTR</i> cDNA to the respiratory tract of individuals with cystic fibrosis," <u>Nat. Gen.</u> , 1994, 8:42-51

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CA	ATT	Crystal, "Transfer of Genes to Humans: Early Lessons and Obstacles to Success," <u>Science</u> , 1995, 270:404-410
	AUU	Dropulić et al., "Functional Characterization of a U5 Ribozyme: Intracellular Suppression of Human Immunodeficiency Virus Type 1 Expression," <u>J. Virol.</u> , 1992, 66(3):1432-1441
	AVV	Dyer and Herrling, "Progress and Potential for Gene-Based Medicines," <u>Mol. Ther.</u> , 2000, 1(3):213-224
	AWW	Felgner et al., "Lipofection: A highly efficient, lipid-mediated DNA-transfection procedure," <u>Proc. Natl. Acad. Sci. USA</u> , 1987, 84:7413-7417
	AXX	Ferry et al., "Retroviral-mediated gene transfer into hepatocytes <i>in vivo</i> ," <u>Proc. Natl. Acad. Sci. USA</u> , 1991, 88:8377-8381
	AYY	Guerrier-Takada et al., "The RNA Moiety of Ribonuclease P Is the Catalytic Subunit of the Enzyme," <u>Cell</u> , 1983, 35:849-857
	AZZ	Hampel and Tritz, "RNA Catalytic Properties of the Minimum (-)sTRSV Sequence," <u>Biochem.</u> , 1989, 28(12):4929-4933
	AAAA	Hampel et al., "'Hairpin' catalytic RNA model: evidence for helices and sequence requirement for substrate RNA," <u>Nucleic Acids Res.</u> , 1990, 18(2):299-304
	ABBB	Heistad and Faraci, "Gene Therapy for Cerebral Vascular Disease," <u>Stroke</u> , 1996, 27(9):1688-1693
	ACCC	Khurana et al., "Pathophysiological basis of cerebral vasospasm following aneurysmal subarachnoid haemorrhage," <u>J. Clin. Neuroscience</u> , 1997, 4(2):122-131
	ADDD	Khurana et al., "Adenovirus-Mediated Gene Transfer to Human Cerebral Arteries," <u>J. Cereb. Blood Flow Metab.</u> , 2000, 20:1360-1371
	AEEE	Kim et al., "Transcriptional Targeting of Replication-defective Adenovirus Transgene Expression to Smooth Muscle Cells <i>in Vivo</i> ," <u>J. Clin. Invest.</u> , 1997, 100:1006-1014
	AFFF	Kitsis et al., "Hormonal modulation of a gene injected into rat heart <i>in vivo</i> ," <u>Proc. Natl. Acad. Sci. USA</u> , 1991, 88:4138-4142
	AGGG	Leclerc et al., "Percutaneous Arterial Gene Transfer in a Rabbit Model," <u>J. Clin. Invest.</u> , 1992, 90:936-944
	AHHH	Leonetti et al., "Antibody-targeted liposomes containing oligodeoxyribonucleotides complementary to viral RNA selectively inhibit viral replication," <u>Proc. Natl. Acad. Sci. USA</u> , 1990, 87:2448-2451
	AIII	Lim et al., "Direct <i>In Vivo</i> Gene Transfer Into the Coronary and Peripheral Vasculatures of the Intact Dog," <u>Circulation</u> , 1991, 83:2007-2011
	AJJJ	Loose-Mitchell, "Antisense nucleic acids as a potential class of pharmaceutical agents," <u>Trends in Pharmacological Sciences</u> , 1988, 9:45-47
	AKKK	Marcus-Sekura, "Techniques for Using Antisense Oligodeoxyribonucleotides to Study Gene Expression," <u>Anal. Biochem.</u> , 1988, 172:289-295
	ALLL	Morling and Russell, "Enhanced transduction efficiency of retroviral vectors coprecipitated with calcium phosphate," <u>Gene Therapy</u> , 1995, 2:504-508
	AMMM	Nabel et al., "Recombinant Gene Expression <i>in Vivo</i> Within Endothelial Cells of the Arterial Wall," <u>Science</u> , 1989, 244:1342-1344
	ANNN	Natta, "Une Nouvelle Classe de Polymères d' α -Olefines ayant une Régularité de Structure Exceptionnelle," <u>J. Polymer Science</u> , 1955, 16:143-154 (Synopsis only in English)

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CA	AOOO	Newman et al., "Adenovirus-mediated Gene Transfer into Normal Rabbit Arteries Results in Prolonged Vascular Cell Activation, Inflammation, and Neointimal Hyperplasia," <u>J. Clin. Invest.</u> , 1995, 96:2955-2965
	APPP	O'Brien, "Gene transfer and vascular disease," <u>Journal of the Irish Colleges of Physicians and Surgeons</u> , 1998, 27:33-39
	AQQQ	Ojwang et al., "Inhibition of human immunodeficiency virus type 1 expression by a hairpin ribozyme," <u>Proc. Natl. Acad. Sci. USA</u> , 1992, 89:10802-10806
	ARRR	Onoue et al., "Adventitial Expression of Recombinant Endothelial Nitric Oxide Synthase Gene Reverses Vasoconstrictor Effect on Endothelin-1," <u>J. Cereb. Blood Flow Metab.</u> , 1999, 19(9):1029-1037
	ASSS	Ooboshi et al., "Adenovirus-Mediated Gene Transfer In Vivo to Cerebral Blood Vessels and Perivascular Tissue," <u>Circ. Res.</u> , 1995, 77:7-13
	ATTT	Perrotta and Been, "Cleavage of Oligoribonucleotides by a Ribozyme Derived from the Hepatitis Virus RNA Sequence," <u>Biochem.</u> , 1992, 31:16-21
	AUUU	Pettersson, "Structural and Nonstructural Adenovirus Proteins," <u>The Adenoviruses</u> , Ginsberg (ed.), 1984, Plenum Press, New York, NY, Chapter 6, pp. 205-270
	AVVV	Price et al., "Lineage analysis in the vertebrate nervous system by retrovirus-mediated gene transfer," <u>Proc. Natl. Acad. Sci. USA</u> , 1987, 84:156-160
	AWWW	Quantin et al., "Adenovirus as an expression vector in muscle cells <i>in vivo</i> ," <u>Proc. Natl. Acad. Sci. USA</u> , 1992, 89:2581-2584
	AXXX	Richter et al., "Adeno-associated virus vector transduction of vascular smooth muscle cells <i>in vivo</i> ," <u>Physiol. Genomics</u> , 2000, 2:117-127
	AYYY	Roberts et al., "Three-Dimensional Structure of the Adenovirus Major Coat Protein Hexon," <u>Science</u> , 1986, 232:1148-1151
	AZZZ	Rosenfeld et al., "Adenovirus-Mediated Transfer of a Recombinant α 1-Antitrypsin Gene to the Lung Epithelium <i>in Vivo</i> ," <u>Science</u> , 1991, 252:431-434
	AAAAA	Rosenfeld et al., "In Vivo Transfer of the Human Cystic Fibrosis Transmembrane Conductance Regulator Gene to the Airway Epithelium," <u>Cell</u> , 1992, 68:143-155
	ABBBB	Rossi et al., "Ribozymes as Anti-HIV-1 Therapeutic Agents: Principles, Applications, and Problems," <u>Aids Research and Human Retroviruses</u> , 1992, 8(2):183-189
	ACCCC	Sarin et al., "Inhibition of acquired immunodeficiency syndrome virus by oligodeoxynucleoside methylphosphonates," <u>Proc. Natl. Acad. Sci. USA</u> , 1988, 85:7448-7451
	ADDDD	Sarver et al., "Ribozymes as Potential Anti-HIV-1 Therapeutic Agent," <u>Science</u> , 1990, 247:1222-1225
	AEEEE	Saville and Collins, "A Site-Specific Self-Cleavage Reaction Performed by a Novel RNA in <i>Neurospora</i> Mitochondria," <u>Cell</u> , 1990, 61:685-696
	AFFFF	Saville and Collins, "RNA-mediated ligation of self-cleavage products of a <i>Neurospora</i> mitochondrial plasmid transcript," <u>Proc. Natl. Acad. Sci. USA</u> , 1991, 88:8826-8830
	AGGGG	Scanlon et al., "Ribozyme-mediated cleavage of c-fos mRNA reduces gene expression of DNA synthesis enzymes and metallothionein," <u>Proc. Natl. Acad. Sci. USA</u> , 1991, 88:10591-10595
	AHHHH	Soriano et al., "Targeted and nontargeted liposomes for <i>in vivo</i> transfer to rat liver cells of a plasmid containing the preproinsulin I gene," <u>Proc. Natl. Acad. Sci. USA</u> , 1983, 80:7128-7131

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CB	AIIII	Spector and Samaniego, "Construction and Isolation of Recombinant Adenoviruses with Gene Replacements," <u>Methods in Molecular Genetics</u> , Adolph (ed.), 1995, Academic Press, Inc., San Diego, CA, Vol. 7, pp. 31-44
	AJJJJ	Stein and Cohen, "Oligodeoxynucleotides as Inhibitors of Gene Expression: A Review," <u>Cancer Res.</u> , 1988, 48:2659-2668
	AKKKK	Suzuki et al., "Heme oxygenase-1 gene induction as an intrinsic regulation against delayed cerebral vasospasm in rats," <u>J. Clin. Invest.</u> , 1999, 104:59-66
	ALLLL	Thierry and Dritschilo, "Intracellular availability of unmodified, phosphorothioated and liposomally encapsulated oligodeoxynucleotides for antisense activity," <u>Nucleic Acids Res.</u> , 1992, 20(21):5691-5698
	AMMMM	Thomas et al., "Peripheral infection with adenovirus causes unexpected long-term brain inflammation in animals injected intracranially with first-generation, but not with high-capacity, adenovirus vectors: Toward realistic long-term neurological gene therapy for chronic diseases," <u>Proc. Natl. Acad. Sci. USA</u> , 2000, 97(13):7482-7487
	ANNNN	Toyoda et al., "Gene transfer of calcitonin gene-related peptide to cerebral arteries," <u>Am. J. Physiol. Heart Circ. Physiol.</u> , 2000, 278:H586-H594
	AOOOO	Toyoda et al., "Calcium phosphate precipitates augment adenovirus-mediated gene transfer to blood vessels in vitro in vivo," <u>Gene Therapy</u> , 2000, 7:1284-1291
	APPPP	van der Krol et al., "Modulation of Eukaryotic Gene Expression by Complementary RNA or DNA Sequences," <u>BioTechniques</u> , 1988, 6(10):958-975
	AQQQQ	Vassalli et al., "A Mouse Model of Arterial Gene Transfer Antigen-Specific Immunity Is a Minor Determinant of the Early Loss of Adenovirus-Mediated Transgene Expression," <u>Circ. Res.</u> , 1999, 85:e25-e32
	ARRRR	von der Leyen et al., "Gene therapy inhibiting neointimal vascular lesion: <i>In vivo</i> transfer of endothelial cell nitric oxide synthase gene," <u>Proc. Natl. Acad. Sci. USA</u> , 1995, 92:1137-1141
	ASSSS	Walder, "Antisense DNA and RNA: progress and prospects," <u>Genes & Development</u> , 1988, 2:502-504
	ATTTT	Wang and Huang, "pH-sensitive immunoliposomes mediate target-cell-specific delivery and controlled expression of a foreign gene in mouse," <u>Proc. Natl. Acad. Sci. USA</u> , 1987, 84:7851-7855
	AUUUU	Weerasinghe et al., "Resistance to Human Immunodeficiency Virus Type 1 (HIV-1) Infection in Human CD4 ⁺ Lymphocyte-Derived Cell Lines Conferred by Using Retroviral Vectors Expressing an HIV-1 RNA-Specific Ribozyme," <u>J. Virol.</u> , 1991, 65(10):5531-5534
	AVVVV	Wen et al., "Second-Generation Adenoviral Vectors Do Not Prevent Rapid Loss of Transgene Expression and Vector DNA From the Arterial Wall," <u>Arterioscler. Thromb. Vasc. Biol.</u> , 2000, 20:1452-1458
	AWWWW	Wickham et al., "Integrins $\alpha_v\beta_3$, $\alpha_v\beta_5$ Promote Adenovirus Internalization but Not Virus Attachment," <u>Cell</u> , 73:309-319
	AXXXX	Wolff et al., "Direct Gene Transfer into Mouse Muscle in Vivo," <u>Science</u> , 1990, 247:1465-1468
	AYYYY	Wood et al., "Immune responses to adenovirus vectors in the nervous system," <u>Trends in Neurosciences</u> , 1996, 19(11):497-500
	AZZZZ	Woolf et al., "Specificity of antisense oligonucleotides <i>in vivo</i> ," <u>Proc. Natl. Acad. Sci. USA</u> , 1992, 89:7305-7309

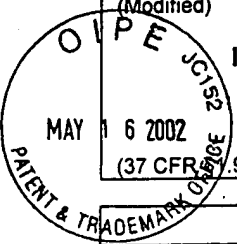
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CA	AAAAA	Yei et al., "Adenovirus-mediated gene transfer for cystic fibrosis: quantitative evaluation of repeated in vivo vector administration to the lung," <u>Gene Therapy</u> , 1994, 1(3):192-200
I	ABBBB	Zhu et al., "Systemic Gene Expression After Intravenous DNA Delivery into Adult Mice," <u>Science</u> , 1993, 261:209-211
↓	ACCCC	Zon, "Synthesis of Backbone-Modified DNA Analogues for Biological Applications," <u>J. Protein Chem.</u> , 1987, 6(2):131-145
↓	ADDDD	Zon, "Oligonucleotide Analogues as Potential Chemotherapeutic Agents," <u>Pharmaceutical Res.</u> , 1988, 5(9):539-549

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